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[54] Title of the patent: A chrysanthemum product without grassy and bitter odor, formulation thereof and method of preparing same

[57] Abstract

The present invention provides a chrysanthemum product without grassy and bitter odor, a formulation thereof and a method of preparing same. It is mainly made from chrysanthemum, cyclodextrin, maltol or ethyl maltol. The main process for preparing the product comprises the following steps: preparing raw materials, preparing water extract of chrysanthemum, adding cyclodextrin, maltol or ethyl maltol, stirring, heating, standing, sterilizing, and packing, etc. The invention can effectively eliminate grassy and bitter odor from chrysanthemum. The chrysanthemum product of the present invention has a natural color, smell and taste, and also has significant health care effects such as sedation, detoxification, clearing away heat, heat-relieving, lowering blood pressure, improving eyesight, etc. It also has significant health care effect on various acute and chronic hepatitis, hepatitis B virus carriers, and patients with halitosis. Furthermore the chrysanthemum product of the present invention can be taken for a long time that may have cosmetic effect with convenience, simplicity and low cost.

(BJ) No. 1456

A chrysanthemum product without grassy and bitter odor, formulation thereof and method of preparing same

The present invention provides a chrysanthemum product without uncomfortable herbal odor mainly composed of grassy and bitter odor, a formulation thereof and a method of preparing same, in particular provides a method of eliminating grassy and bitter odor from a chrysanthemum product and a formulation thereof.

The defect of the chrysanthemum product prepared by existing technology is that all the products have an uncomfortable herbal odor mainly composed of grassy and bitter odor of Chrysanthemum. The product still has a certain uncomfortable herbal odor even when Hangzhou white chrysanthemum which has the lightest odor, was used as raw material. Although the uncomfortable odor can be alleviated by reducing the proportion of chrysanthemum in the product or adding pigment, flavor etc. the color, smell and taste of the product are deteriorated, and its health care effect is also reduced consequently, thus losing its practical significance. Additionally, there has a difficulty in the supply of Hangzhou white chrysanthemum with a high cost, so that chrysanthemum can not be widely used.

In order to alleviate the above problems existing in the prior technology, the objective of the present invention is to provide a chrysanthemum product without grassy and bitter odor, a formulation thereof and a method of eliminating grassy odor and bitter taste from a chrysanthemum product, without limitation of origin, variety of raw materials. And the present invention is also not limited by the used amount of raw materials, and can effectively eliminate the grassy and bitter odor of chrysanthemum to make the product having a unique style, fresh smell, mellow taste, refreshing and non-greasily, and favorable natural color, smell, taste, as well as significant health effects. The product of the invention is obtained easily with low cost.

The technical solution of the invention:

A combination of flavoring agent maltol or ethyl maltol and cyclodextrin having seasoning effect, or stir-baked malt (or stir-baked barley, stir-baked wheat) containing both them is used as masking agent, to eliminate the grassy odor and bitter taste of chrysanthemum.

Formulation I: main components: chrysanthemum of 70~98.97%, cyclodextrin of 1~30%, maltol of 0.005~0.03 (or ethyl maltol of 0.00002~0.0002%)

Formulation II: main components: chrysanthemum of 60~90%, stir-baked

malt of 10~40%

Formulation III: chrysanthemum of 40~80%, stir-baked barley (or stir-baked wheat) of 20~60%, cyclodextrin amylase added 1~15% compared to the weight of stir-baked barley (or stir-baked wheat)

The proportion described herein means the weight percentage of each of the main components (the content of maltol and ethyl maltol is very little). If various chrysanthemum products such as various beverages are formulated, other components may be added in suitable amount additionally.

The method of preparation:

According to the above three formulations, the main components are prepared for ready-to-use.

The preparation of formulation I: Firstly, water extract of chrysanthemum is prepared, which weight is 3~4 times the dry weight of chrysanthemum. Cyclodextrin is added to the water extract of chrysanthemum, stirred, and then the maltol or ethyl maltol, or a mixture of maltol and ethyl maltol is added thereto. The conversion relationship between maltol and ethyl maltol is: the amount of ethyl maltol is 1/6 of that of maltol. The total amount converted can not exceed the highest amount used either singly. The resulting mixture are stirred and stand for 12 hrs at low temperature (slightly above freezing point, at 1~4 °C), so as to increase the insoluble substance produced therefrom, and then centrifuged (8000~2000 r/min), bottled or sealed in can, heat-sterilized, finally obtaining final product.

The preparation of formulation II: Water extract of chrysanthemum is prepared with the same method for formulation I. Water extract of stir-baked malt is prepared at the same time, the weight of which is 3~4 times the dry weight of stir-baked malt. The water extract of stir-baked malt and the water extract of chrysanthemum are combined and stirred. It is also possible that chrysanthemum and stir-baked malt are mixed in proportions to prepare water extract. The weight of water extract is 3~4 times the dry weight of total raw materials. The subsequent process and steps is equal to that for formulation I.

The preparation of formulation III: Water extract of chrysanthemum is prepared with the same method for formulation I. Water extract of stir-baked barley (or stir-baked wheat) is prepared at the same time, the weight of which is 3~4 times the dry weight of stir-baked barley (or stir-baked wheat). The resulting water extract is cooled to 60 °C and added 1~15% cyclodextrin amylase based on the dry weight of stir-baked barley (or stir-baked wheat). The resulting mixture is stirred for 2 hrs at a temperature of 60 °C to make them

react, and then the temperature is increased to 100 °C to inactivate enzyme for 1 minute, followed by cooled immediately. The resulting solution is mixed with the water extract of chrysanthemum, and stirred. The subsequent process and steps is equal to that for formulation I.

Chrysanthemum juice without grassy and bitter odor can be formulated by the above process. Furthermore, health care products of chrysanthemum with favorable color, smell, taste, such as carbonated beverages, common soft drinks, solid drinks and chrysanthemum tea, sparkling wine, can be formulated as needed.

Example 1: Chrysanthemum juice

5 kg chrysanthemum was weighed out, added 10 kg water and immersed for about 10 min. Then the mixture was heated to boil for 10 min, filtered and the filtrate was eliminated. Then 5~6 kg water was added again to be heated to boil for 10 min, filtered and the filtrate was eliminated. The two filtrates were combined to obtain about 15 kg solution, to which added 0.25 kg cyclodextrin, and stirred. Then 0.1 g maltol was added to the resulting solution and stirred before placed in refrigerator (temperature was controlled at 1°C) for 12 hrs. After centrifugation, the separated chrysanthemum juice was packaged in 0.5L bottle or can following centrifuged, capped and sealed, and then heat-sterilized at about 85°C for 30 min, thereby obtaining final product, Chrysanthemum juice.

Example 2: Chrysanthemum juice

The method of preparing the water extract of chrysanthemum is the same as that in Example 1. At the same time, 2.5 kg stir-baked malt was added 3 kg water and immersed for 20 min at a temperature maintained between 85 °C and 89 °C. The mixture was filtered and the filtrate was eliminated. Then 2 kg water was added again and boiled for 10 min, filtered and the filtrate was eliminated. The two filtrates were combined, added to the water extract of chrysanthemum and subjected to sufficient agitation. The resulting solution was placed in refrigerator with temperature controlled at 1°C. The subsequent process is equal to that in Example 1.

Example 3: Chrysanthemum aerated water

6 kg chrysanthemum, 3 kg stir-baked malt, 90 kg sucrose, 0.85 kg citric acid were used for 1 ton product. 6 kg chrysanthemum was added 10 kg water and immersed for 10 min. Then the mixture was heated to boil for 10 min, filtered and the filtrate was eliminated. Then 5~6 kg water was added again to be heated to boil for 10 min, filtered and the filtrate was eliminated. The two filtrates were combined to obtain about 15 kg solution. 3 kg stir-baked malt was added 3 kg water and immersed for 20 min at a temperature maintained between 85 °C and 89 °C. The mixture was filtered and the filtrate was eliminated. Then 3 kg water was added again and boiled for 10 min, filtered and

the filtrate was eliminated. The two filtrates were combined to obtain about 5 kg solution. The water extract of stir-baked malt was added to the water extract of chrysanthemum and subjected to sufficient agitation. Then the resulting solution was subjected to raw materials proportioning, cooling, metering volume, initially measurement, re-measurement, the adjustment for re-measurement, mixed carbonated (2~2.5 atmosphere pressure), filling and capping etc. according to conventional process of the production of aerated water and processed to final product. The product has an appearance of transparent light green (or light yellow, while flos chrysanthemum is used) with a unique flavor of chrysanthemum.

The chrysanthemum product and other health drinks prepared according to the present invention have no grassy and bitter odor of chrysanthemum, a unique style, fresh smell, mellow taste, are refreshing and non-greasy, and have a unique clear incense of chrysanthemum, completely natural color, smell, taste, without the addition of any chemical compounds such as pigment, essence, etc. The chrysanthemum product of the present invention has significant effects such as sedation, detoxification, clearing away heat, heat-relieving, lowering blood pressure, improving eyesight, etc. Another prominent advantage of the product of the present invention is a significant health care effect on various acute and chronic hepatitis, hepatitis B virus carriers, and patients with halitosis. Furthermore the chrysanthemum product of the present invention can be taken for a long time that may have cosmetic effect

What is claimed is:

1. A chrysanthemum product without grassy and bitter odor, characterized in that:

main components of Formulation I: chrysanthemum, cyclodextrin, maltol (or ethyl maltol) ,and the proportion of these three components is as follows: chrysanthemum of 70~98.97%, cyclodextrin of 1~30%, maltol of 0.005~0.03% or ethyl maltol of 0.00002~0.0002%; or chrysanthemum of 60~90%, stir-baked malt of 10~40%; or chrysanthemum of 40~80%, stir-baked barley (or stir-baked wheat) of 20~60%, furthermore, cyclodextrin amylase: added 1~15% compared to the weight of stir-baked barley (or stir-baked wheat). (Total weight of components is 100%).

2. A preparative method of eliminating grassy and bitter odor from a chrysanthemum product, characterized in that:

(1) All main components (chrysanthemum, cyclodextrin, maltol or ethyl maltol; chrysanthemum, stir-baked malt; chrysanthemum, stir-baked barley or stir-baked wheat) are prepared in proportions as needed,

(2) Water extract of chrysanthemum is prepared (the ratio of the water extract and dry weight of chrysanthemum is 3~4:1)

(3) The resulting water extract is treated respectively in the following three cases:

① The prepared cyclodextrin is added to the water extract of chrysanthemum, stirred, then the prepared maltol or ethyl maltol is added thereto and stirred.

② The water extract of stir-baked malt is added to the water extract of chrysanthemum, mixed sufficiently under stirring, or chrysanthemum and stir-baked malt are mixed in proportions to prepare water extract.

③ The cyclodextrin amylase is added to a water extract of stir-baked barley or stir-baked wheat, stirred for 2 hrs at a temperature of 60 °C to make them react, and then the temperature is increased to 100 °C to inactivate enzyme for 1 minute, cooled immediately, and the resulting solution is mixed with the water extract of chrysanthemum, and stirred.

(4) The solutions prepared in the above cases are stand for 12 hrs at a temperature range of 1~4 °C, and then centrifuged (8000~2000 r/min), bottled or sealed following separated, and heat-sterilized.

3. The preparative method of eliminating grassy and bitter odor from a chrysanthemum product according to claim 2, characterized in that the maltol and the ethyl maltol can be added in combination.

4. The preparative method of eliminating grassy and bitter odor from a chrysanthemum product according to claim 2, characterized in that the chrysanthemum and the stir-baked malt can be mixed together in proportions to prepare the water extract.



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〔54〕发明名称 菊花制品去生育、苦涩气味法及配方

〔57〕摘要

本发明给出的是一种菊花制品去除生育、苦涩气味法及其配方。它主要用菊花、环糊精、麦芽酚或乙基麦芽酚。其采用主要工艺是配料、制取菊花水提液、加入环糊精、麦芽酚或乙基麦芽酚、搅拌、加温、静置、灭菌、分装等工艺。采用本发明可以有效地解除菊花生育、苦涩气味，制成的菊花制品具有自然的色、香、味，还有显著保健疗效，如镇静、解毒、清热、祛暑、降压、明目等作用。另外对各种急、慢性肝炎、乙肝病毒携带者、口臭患者均有显著的保健疗效，久服有美容作用，方便简单，成本低。

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权 利 要 求 书

1. 去除生青、苦涩气味的菊花制品，其特征是：

主要成份配方 I：菊花、环糊精、麦芽酚（或乙基麦芽酚），其三种成份的配比是：菊花 70～98.97%，环糊精 1～30%，麦芽酚 0.005～0.03% 或乙基麦芽酚 0.00002～0.0002%；或菊花 60～90%，炒麦芽 10～40%；或菊花 40～80%，炒大麦（或炒小麦）20～60%，环糊精淀粉酶：按炒大麦（或炒小麦）重量的 1～15% 加入。（各配比成份重量总和为 100%）。

2. 菊花制品去除生青、苦涩气味的制取工艺方法，其特征是：

- （1）各种主要成份（菊花、环糊精、麦芽酚或乙基麦芽酚；菊花、炒麦芽；菊花、炒大麦或炒小麦）按比例按需要备好，
- （2）制取菊花水提液（水提液与菊花干重比约 3～4：1）
- （3）以下按三种情况分别处理。

① 将备好的环糊精加入菊花水提液中搅拌，再加入备好的麦芽酚或乙基麦芽酚进行搅拌。

② 将炒麦芽水提液加入菊花水提液混合充分搅拌，或者将菊花、炒麦芽按比例混合制取水提液。

③ 在炒大麦（或炒小麦）水提液中加入环糊精淀粉酶，在 60℃ 温度中搅拌 2 小时，使其反应，接着将温度升高到 100%，1 分钟灭酶，立即冷却，将得到的溶液与菊花水提液混合搅拌。

(4) 将上述几种情况制取的溶液，在 $1^{\circ}\text{C} - 4^{\circ}\text{C}$ 范围内静置 12 小时，然后离心分离 ($8000 \sim 2000 \text{ r/min}$)，分离后装瓶或密封，加热杀菌。

3. 根据权利要求 2 所述的菊花制品去除生青、苦涩气味的制取工艺方法，其特征是加入的麦芽酚或乙基麦芽酚，可以是二者混合配入。

4. 根据权利要求 2 所述的菊花制品去除生青、苦涩气味的制取工艺方法，其特征是菊花与炒麦芽可以按比例混合在一起制取水提液。

菊花制品去生青、苦涩气味法及配方

本发明给出的是一种菊花制品去除其生青苦涩气味构成的不适中药气味的制法及配方——菊花制品去生青、苦涩气味法及配方。

现有技术生产的菊花制品其主要缺陷是：产品均有一种菊花的生青、苦涩气味构成的不适中药气味，即使以气味最轻的杭白菊为原料，产品仍然存有一定的不适中药气味，虽然可通过降低产品中菊花比例、或加入色素、香精等成份来减轻其不适气味，但其结果破坏了其自然的色、香、味，降低了保健疗效，以致失去其实用意义。另外这种杭白菊原料供应有一定困难，成本偏高，致使菊花不能被广泛利用。

本发明的目的在于针对上述存在的问题，提出一种菊花制品去生青、苦涩气味的制法及配方，它对原料使用不受产地、品种的限制。它也不受其用量限制，它能有效解除菊花的生青臭气和苦涩味，使产品风格独特、气味清新、口感圆润、爽口不腻，有良好的全自然的色、香、味，并具有显著的保健疗效。取材方便、成本又低。

本发明的技术方案：

以增香剂麦芽酚或乙基麦芽酚和具有调味作用的环糊精合用或用含有二者的炒麦芽，（或炒小麦、炒大麦）作为掩盖剂，来消除菊花的生青臭气和苦涩味。

配方1：成份主要有菊花70～98.97%。环糊精

1 ~ 30%，麦芽酚 0.005 ~ 0.03，（或乙基麦芽酚 0.00002 ~ 0.0002%）

配方Ⅱ：成份主要有菊花 60 ~ 90%，炒麦芽 10 ~ 40%，

配方Ⅲ：菊花 40 ~ 80%，炒大麦（或炒小麦）20 ~ 60%

环糊精淀粉酶按炒大麦（或炒小麦）重量 1 ~ 15% 加入

上述主要成份的配比是指各成份之和与其各成份重量的百分比（麦芽酚乙基麦芽酚含量甚微）。如配制各类菊花制品，如各种饮料，再适量加入其他成份即可。

制取工艺方法：

根据上述三种配方，按配方将主要成份配比备好。

配方Ⅰ制法：先制取菊花水提液，水提液重量为菊花干重 3 - 4 倍，将环糊精加入菊花水提液中搅拌，再加入麦芽酚或乙基麦芽酚，或二者混合加入。两者换算关系：

乙基麦芽酚的量 = 麦芽酚的量 / 6，换算后的总量不能超过其中之一种单用的最高量，进行搅拌，放在低温下（稍超过冰点在 1℃ ~ 4℃）静置 12 小时，使其产生的不溶性物增加成熟，然后离心分离，（8000 ~ 2000 r / min），装瓶或罐密封，加热杀菌，即成制品。

配方Ⅱ制法：制取菊花水提液与配方Ⅰ制法一样，同时制取炒麦芽水提液，重量约为炒麦芽干重的 3 - 4 倍，将炒麦芽水提液与菊花水提液混合搅拌，若将菊花、炒麦芽按比例混合制取水提液也可。水提液为总原料干重 3 - 4 倍，以下工艺方

法及步骤同配方 I 制法。

配方 II 制法：制取菊花水提液方法同配方 I 制法，同时制取炒大麦（或炒小麦）水提液，重量约为炒大麦（或炒小麦）干重的 3—4 倍，降温至 60℃，按炒大麦（或炒小麦）干重 1~15% 加入环糊精淀粉酶，在 60℃ 温度中搅拌 2 小时，使其反应，接着将温度升高到 100℃，1 分钟，灭酶，立即冷却，将制得的溶液与菊花水提液混合搅拌，以下工艺方法步骤同配方 I 制法。

通过以上制法，即可配制成能除生青、苦涩气味的菊花原汁，根据需要，可配制碳酸饮料、一般软饮料、固体饮料以及菊花茶、汽酒等色、香、味俱佳的菊花保健制品。

实施例 1：菊花原汁：

取菊花 5 公斤，先加水 10 公斤，浸 10 分钟左右，然后加热煮沸 10 分钟，滤取汁，再加水 5—6 公斤，再加热煮沸 10 分钟，滤取汁，将两次滤汁混合加在一起，约得 15 公斤左右，加入环糊精 0.25 公斤进行搅拌，再加入麦芽酚 0.1 克搅拌，放入冰箱中（温度控制在 1℃），静置 12 小时，然后离心分离，将分离后的菊花原汁分装于 1 斤的瓶或罐中，加盖密封，85℃ 左右加热 30 分钟杀菌，即成制品——菊花原汁。

实施例 2：菊花原汁：

制取菊花水提液工艺方法同实施例 1 方法，同时另将炒麦

芽 2.5 公斤加水 3 公斤保持在 85℃～89℃ 的温度中浸泡 20 分钟，滤取汁，再加水 2 公斤煮沸 10 分钟，滤取汁，两次滤汁混合在一起，加入到菊花水提液中充分搅拌，放入冰箱中温度控制在 1℃，以下的工艺方法同实施例 1。

实施例 3：菊花汽水：

每吨产品用菊花 6 公斤，炒麦芽 3 公斤，蔗糖 90 公斤，柠檬酸 0.85 公斤。取菊花 6 公斤加水 10 公斤浸 10 分钟，然后加热煮沸 10 分钟，滤取汁，再加水 5～6 公斤煮沸 10 分钟，滤取汁，两次滤汁混合加在一起，约得 15 公斤，同时取炒麦芽 3 公斤加水 3 公斤保持 85℃～89℃ 温水浸泡 20 分钟，滤取汁，再加水 3 公斤煮沸 10 分钟，滤取汁，两次滤汁合并，混合约得 5 公斤，将炒麦芽水提液加入菊花水提液中充分搅拌，然后按汽水生产常规工艺流程经配料、冷却、立容、初测、复测、调整复测、混合碳酸化（2～2.5 个大气压），灌装封盖等即成制品，产品外观透明淡绿色（如用黄菊花则为淡黄色），具有菊花独特风味。

采用本发明制成的菊花制品以及所配制的其他保健饮料，无菊花生青、苦涩气味，风格独特、气味清新、口感圆润、清爽不腻，具有菊花独特的清香风味，全自然的色、香、味，不需添加任何色素、香精等化学合成物。具有菊花明显的镇静、解毒、清热、祛暑、降压、明目等作用，另外突出的优点是对各种急、慢性肝炎、乙肝病毒携带者、口臭患者有显著的保健疗效。久服有美容作用。